

WEIJIE ZHONG

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Education

Columbia University

Ph.D. Candidate in Economics (2013-present)

Expected Completion Date: June 2019

Research Fields: Microeconomic Theory

References:

Professor Yeon-Koo Che

Columbia University

(212) 854-8276

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Professor Navin Kartik

Columbia University

(212) 854-3926

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Professor Qingmin Liu

Columbia University

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Tsinghua University

BSc. in Mathematics and Physics (2013)

BA in Economics (2013)

Job Market Paper

“Optimal Dynamic Information Acquisition.”

Abstract: I study a dynamic model in which a decision maker (DM) acquires information about the payoffs of different alternatives prior to making her decision. The key feature of the model is the flexibility of information: the DM can choose any dynamic signal process as an information source, subject to a flow cost that depends on the informativeness of signal. Under the optimal policy, the DM looks for a signal that arrives according to a *Poisson process*. The optimal Poisson signal confirms the DM’s prior belief and is so accurate as to warrant an immediate action from the DM. Over time, absent arrival of a Poisson signal, the DM continues seeking a Poisson signal that is increasingly more precise but arrives less frequently.

Latest Version: <https://goo.gl/xCg6R1>, *Supplemental Material:* <https://goo.gl/hzrzac>

Research Papers

Published Papers

“Auctions with Limited Commitment.” with Qingmin Liu, Konrad Mierendorff and Xianwen Shi.

American Economic Review, Forthcoming.

Working Papers and Work in Progress

“Time preference and information acquisition.”

Abstract: I consider the sequential implementation of a target information structure. I characterize the set of decision time distributions induced by all signal processes that satisfy a per-period learning capacity constraint. I find that all decision time distributions have the same expectation, and the maximal and minimal elements by mean-preserving spread order are deterministic distribution and exponential distribution. The result implies that when time preference is risk loving (e.g. standard or hyperbolic discounting), Poisson signal is optimal since it induces the most risky exponential decision time distribution. When time preference is risk neutral (e.g. constant delay cost), all signal processes are equally optimal.

Latest Version: <https://goo.gl/9aV6BD>, *ArXiv:* 1809.05120

“Indirect information measure and dynamic learning.”

Abstract: I study the robust predictions of optimal learning dynamics in information acquisition problems where the measure of signal informativeness is an indirect measure from sequential cost minimization. I first show that an indirect information measure is supported by sequential cost minimization *iff* it satisfies: 1) monotonicity in Blackwell order, 2) sub-additivity in compound experiments and 3) linearity in mixing with no information. In a dynamic learning problem, if the cost of information depend on an indirect information measure and delay cost is fixed, then the optimal solution involves direct Poisson signals: arrival of signals directly suggest the optimal actions, and non-arrival of signal provides no information.

Latest Version: <https://goo.gl/ZCGBDt>, *ArXiv:* 1809.00697

“Lemonade from Lemons: Information Design and Adverse Selection.” with Navin Kartik

Abstract: We consider a canonical bargaining problem: a buyer makes a take-it-or-leave-it offer to a seller for a single object. The two parties’ values for the object are interdependent. We study the set of payoff vectors that can be implemented using joint information design. We establish that the set is all payoffs satisfying simple feasibility and individual-rationality constraints. We also investigate what is implementable only using information structures in which the seller is more informed than the buyer, or more generally, under a “no signaling” equilibrium restriction. We show that there is then no loss in providing the buyer with no information and only varying the seller’s information; i.e., familiar adverse-selection structures emerge. However, except in some notable special cases, these information structures do not implement all payoff vectors—in particular, they do not maximize the seller’s payoff or minimize the buyer’s payoff. Our model encompasses monopoly pricing, for which our results augment those of Bergemann, Brooks, and Morris (2015) and Roesler and Szentes (2017).

“Ratings-Guided Markets.” with Yeon-Koo Che and Teddy Kim

Abstract: We consider a decentralized market where buyers search to trade with sellers of unknown quality. Each buyer targets sellers based on their ratings — a coarse summary (e.g. average) of the seller’s quality collected from previous transactions involving these sellers. We study the implication of a novel informational externality in the rating-guided market: the informational content of the sellers’ ratings is endogenous, depending on the frequency of their trading, but buyers make trading decisions not taking into account their informational effects. First, we show that an improvement in the ratings technology may exacerbate the informational externality, and hence can be welfare-worsening. Second, we extend the baseline model to allow for two ex ante identical demographic groups, and show that the informational externality endogenously generates statistical discrimination. In a stable equilibrium, highly-rated sellers (or workers) in the advantaged group receive more attention than highly-rated sellers (or workers) in the disadvantaged group, leading to discrimination against the latter group in a self-fulfilling fashion. Our analysis implies that an affirmative action policy restores equality, but only in the short run, as the non-discriminative equilibrium is unstable.

“Selling information.”

Abstract: I consider the monopolistic pricing of informational good. A buyer’s willingness to pay for information is from inferring the unknown payoffs of actions in decision making. A monopolistic seller and the buyer each observes a private signal about the payoffs. The seller’s signal is binary and she can commit to sell any statistical experiment of her signal to the buyer. Assuming that buyer’s decision problem involves rich actions, I characterize the seller’s revenue maximizing menu. The optimal menu involves a continuum of experiments, each containing different amount of information. I also find a complementarity between buyer’s private information and information provision: when buyer’s private signal is more informative, the optimal menu contains more informative experiments.

Latest Version: <https://goo.gl/6aRjZY>, *ArXiv:* 1809.06770

Professional Activities

Referee

Econometrica, *Journal of Economic Theory*, *European Journal of Operational Research*

Conference & Workshop Presentations

- 2017: *Warwick Economics PhD Conference (Warwick)*, *The Econometric Society Summer Meetings (Asian: CUHK; China: Wuhan; North American: WUSTL)*, *Midwest Economic Theory Conference (Kentucky)*, *SAET (Portugal)*, *Young Economists Symposium (Yale)*, *International Conference on Game Theory (Stony Brook)*
- 2018: *SITE Workshop in Dynamic Games (Stanford)*, *The Econometric Society Summer Meetings (China: Fudan; North American: UC Davis)*, *BEAT (Tsinghua)*, *International Conference on Game Theory (Stony Brook)*

Research Experiences

Research Assistantships

- 2014: Sylvain Chassang (Princeton University)
- 2015: Qingmin Liu (Columbia University), Navin Kartik (Columbia University)
Marina Halac and Andrea Prat (Columbia Business School)
- 2016: Marina Halac and Pierre Yared (Columbia Business School)
Yeon-Koo Che (Columbia University)
- 2017: Navin Kartik (Columbia University), Yeon-Koo Che (Columbia University)
Marina Halac and Pierre Yared (Columbia Business School)
- 2018: Yeon-Koo Che (Columbia University)

Teaching Experiences

Graduate

- 2015: G5211 *Microeconomic Analysis I*, TA for Pietro Ortoleva
- 2016: G6212 *Microeconomic Analysis II*, TA for Patrick Bolton and Navin Kartik
G6409 *Math Methods for Economists*, Instructor
G6410 *Math Methods for Economists*, TA for Satyajit Bose
- 2018: G6600 *Market Design*, TA for Yeon-Koo Che

Undergraduate

- 2014: W3211 *Intermediate Micro*, TA for Jonathan Vogel
- 2015: W3211 *Intermediate Micro*, TA for Pietro Ortoleva

Honors and Awards

- 2018: Dissertation Fellowship, Columbia University (-2019)
- 2016: Wueller Award for Best Thesis Proposal, Columbia University
- 2013: Dean's Fellowship, Columbia University (-2018)
- 2013: Graduate of Distinction (1%), Tsinghua University